IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventor:	Marcel Breeuwer		
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Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

Dear Sir:

Attached herewith is an Appeal Brief pursuant to 35 U.S.C. §134 and 37 C.F.R. §41.37 for the above-identified patent application in support of a Notice of Appeal filed at the US Patent and Trademark Office on September 30, 2008.

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I. REAL PARTY IN INTEREST

The real party in interest in the above-entitled application is Koninklijke Philips Electronics N.V., Eindhoven, NL

II. RELATED APPEALS AND INTERFERENCES

The undersigned attorney/agent, the appellants, and the assignee are not aware of any related appeals or interferences that would directly affect, or be directly affected by, or have a bearing on the Board's decision in this pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-20 are rejected, and are all on appeal.

IV. STATUS OF AMENDMENTS

An amendment submitted on March 20, 2008, has been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent **claim 1** is directed to a method of analyzing a quantity having temporal and spatial variations. The method includes forming a multidimensional output data array comprising array positions arranged along at least a first data-axis and a second data-axis. Values of the quantity are entered in the multidimensional output data array, such that values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis and values of the quantity at substantially the same spatial position are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis. (*See, inter alia,* page 1, lines 28-29 to page 2, lines 1-9; page 7, lines 2-5; and Figure 2).

Independent **claim 11** is directed to a data processing system adapted to analyze a quantity having temporal and spatial variations, the system being arranged to form a multidimensional output data array. The multidimensional output data array comprises array positions arranged along at least a first data-axis and a second data axis. Values of the quantity are entered in the multidimensional output data array, such that values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis and values of the quantity at substantially the same spatial position are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis. (*See, inter alia,* page 1, lines 28-29 to page 2, lines 1-9; page 7, lines 2-5; and Figure 2).

Independent **claim 12** is directed to a computer-readable data carrier having stored therein a computer program. The computer program comprises instructions to form a multidimensional output data array. The multidimensional output data array comprises array positions arranged along at least a first data-axis and a second data axis. Values of the quantity in the multidimensional output data array are entered, such that values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis and values of the quantity at substantially the same spatial position are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis. (*See, inter alia,* page 1, lines 28-29 to page 2, lines 1-9; page 7, lines 2-5; and Figure 2).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-20 are anticipated under 35 U.S.C. 102(e) by Stadler et al ("Stadler" US 2002/0016548).

VII. ARGUMENTS

A. The Rejection of Claims 1-20 under 35 U.S.C. 102(e)

Claims 1-20 stand rejected under 35 U.S.C. 102(e) as being anticipated by Stadler. This rejection should be withdrawn because Stadler does not teach each and every element as set forth in the subject claims and, therefore, does not anticipate claims 1-20.

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). MPEP §2131.

Claims 1-5

Independent **claim 1** is directed to a method of analyzing a quantity having temporal and spatial variations including, *inter alia*, **a multidimensional output data array** is formed comprising array positions arranged **along at least a first data-axis** and **a second data-axis**, and values of the quantity are entered in the multidimensional output data array, **such that values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis** and **values of the quantity at substantially the same spatial position are entered at respective positions in the multi-dimensional output data array at equal positions along the second-data axis.** The Office asserts that Stadler teaches the emphasized claim aspects. Appellant respectfully disagrees.

Particularly, the Office asserts that the "spatial vector" taught in ¶ [0063] of Stadler corresponds to the multidimensional output data array recited in claim 1. Appellant respectfully disagrees. The multidimensional output data array recited in claim 1 has at least two data-axes and is populated with values, such that values representing a same time are aligned along a first data-axis, and values representing a same spatial position are aligned along a second data-axis. In contrast, the "spatial vector" taught in Stadler is derived from

mathematically combining electrocardiogram signals from selected pairs of the three lead vectors S-I, L-M and A-P of the sensing axes of selected electrode pairs. It is not a multidimensional output data array that is populated with values as required by claim 1.

In addition, the Office asserts that Stadler teaches in ¶ [0083] that values at substantially the same instant are aligned along the first data-axis of a multidimensional array. However, Stadler fails to teach aligning any values in a multidimensional data array as required by claim 1.

In view of the foregoing, this rejection should be reversed.

Claims 2-5 depend from claim 1 and the rejection thereof should be reversed at least by virtue of their dependency upon an allowable base claim.

Claim 6

Claim 6 depends from claim 1 and recites, *inter alia*, that the values of the quantity are derived from a series of images. The Office asserts that Stadler teaches this claim aspect in ¶ [0002]. Appellant respectfully disagrees. Particularly, the Office asserts that Stadler teaches in ¶ [0002] monitoring electrocardiogram signals. However, electrocardiogram signals are not a series of images as recited in claim 6. Stadler fails to teach that any values in any multidimensional output data array are derived from a series of images as required by claim 6. Accordingly, this rejection should be reversed.

Claim 7

Claim 7 depends from claim 1 and recites, *inter alia*, that values of the quantity at respective instants are derived from respective images in the series of images. The Office asserts that Stadler teaches this claim aspect in ¶ [0005] in a waveform characterized by a periodic PQRST electrical activation sequence. However, a waveform is not a series of images as recited in claim 7. Stadler fails to teach that values of the quantity at respective instants are derived from respective images in the series of images as required by claim 7. Accordingly, this rejection should be reversed.

Claim 8

Claim 8 depends from claim 1 and recites, *inter alia*, that respective positions in the multidimensional output data array are linked to respective spatial sections in respective images of the series. The Office asserts that Stadler teaches this claim aspect in ¶ [0070]. Appellant respectfully disagrees. More particularly, the Office asserts that Stadler teaches in ¶ [0070] that data related to detection of ischemia is stored in memory for later uplink telemetry transmission and analysis. However, Stadler fails to teach that respective positions in the multidimensional output data array are linked to respective spatial sections in respective images of the series as required by claim 8. Accordingly, this rejection should be reversed.

Claim 9

Claim 9 depends from claim 1 and recites, *inter alia*, that the multidimensional output data array is displayed, a position in the displayed multidimensional output data array is indicated, and on the basis of the indicated position in the displayed multidimensional output data array the corresponding image of the series is displayed and corresponding spatial section in the image is marked. The Office asserts that Stadler teaches this claim aspect in ¶ [0056] in that a display enables graphic and textual interface with the physician or patient. However, Stadler fails to teach that the multidimensional output data array is displayed, a position in the displayed multidimensional output data array is indicated, and on the basis of the indicated position in the displayed multidimensional output data array the corresponding image of the series is displayed and corresponding spatial section in the image is marked as required by claim 9. Accordingly, this rejection should be reversed

Claim 10

Claim 10 depends from claim 1 and recites, *inter alia*, that the quantity pertains to perfusion of the myocardium. The Office asserts that Stadler teaches this claim aspect in ¶ [0007]. Appellant respectfully disagrees. Particularly, the Office asserts that Stadler teaches in ¶ [0007] ischemic myocardium. However, Stadler fails to teach that values of any quantity

pertains to perfusion of the myocardium as required by claim 10. Accordingly, this rejection should be reversed.

Claims 11-12

Independent **claims 11 and 12** recite claim aspects similar to those recited in claim 1. As such, the above discussion with respect to claim 1 applies *mutatis mutandis* to claims 11 and 12, and this rejection should be reversed.

Claim 13

Claim 13 depends from claim 1 and recites, *inter alia*, displaying the multidimensional output data array. The Office asserts that Stadler teaches this claim aspect in ¶ [0056]: a display 59. However, Stadler fails to teach displaying the multidimensional output data array as required by claim 13. Accordingly, this rejection should be reversed.

Claim 14

Claim 14 depends from claim 1 and recites, *inter alia*, that the values of the quantity are derived from image data, and further comprising displaying the image data while displaying the multidimensional output data array. Claim 14 recites claim aspects similar to those recited in claims 6 and 9. As such, the above discussion with respect to claims 6 and 9 applies *mutatis mutandis* to claim 14, and this rejection should be reversed.

Claim 15

Claim 15 depends from claim 1 and recites, *inter alia*, that the quantity is an average brightness value of image data. The Office asserts that Stadler teaches this claim aspect in ¶ [0010]: an average normal ST signal level. However, Stadler fails to teach that the quantity is an average brightness value of image data as required by claim 15. Accordingly, this rejection should be reversed.

Claim 16

Claim 16 recites claim aspects similar to those recited in claim 10. As such, the above discussion with respect to claims 10 applies *mutatis mutandis* to claim 16, and this rejection should be reversed.

Claim 17

Claim 17 depends from claim 11 and recites claim aspects similar to those recited in claims 9 and 13. As such, the above discussion with respect to claims 9 and 13 applies *mutatis mutandis* to claim 17, and this rejection should be reversed

Claim 18

Claim 18 depends from claim 17 and recites claim aspects similar to those recited in claims 6 and 9. As such, the above discussion with respect to claims 6 and 9 applies *mutatis mutandis* to claim 18, and this rejection should be reversed

Claim 19

Claim 19 depends from claim 11 and recites claim aspects similar to those recited in claim 15. As such, the above discussion with respect to claim 15 applies *mutatis mutandis* to claim 19, and this rejection should be reversed.

Claim 20

Claim 20 depends from claim 19 and recites claim aspects similar to those recited in claim 10. As such, the above discussion with respect to claim 10 applies *mutatis mutandis* to claim 20, and this rejection should be reversed.

CONCLUSION

In view of the foregoing, it is submitted that the claims distinguish patentably and non-obviously over the prior art of record, and reversal of the rejection of the claims herein is respectfully requested.

Respectfully submitted,

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VIII. CLAIM APPENDIX

1. A method of analyzing a quantity having temporal and spatial variations, wherein

- a multidimensional output data array is formed
- the multidimensional output data array comprises array positions arranged along at least a first data-axis and a second data-axis,
- values of the quantity are entered in the multidimensional output data array, such that
  - values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis and
  - values of the quantity at substantially the same spatial position are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis.

2. A method as claimed in Claim 1, wherein

- values of the quantity are acquired for respective temporal instants and for respective spatial sections and
- values of the quantity for individual spatial sections are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis.

3. A method as claimed in Claim 1, wherein

- values of the quantity are acquired for respective time intervals and for respective spatial positions and values of the quantity for individual time interval are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis.

4. A method as claimed in Claim 1, wherein

- values of the quantity for successive time intervals are entered at adjacent positions in the multidimensional output data array and
- values of the quantity for adjacent spatial sections are entered at adjacent positions in the multidimensional output data array.

5. A method as claimed in Claim 4, wherein values of the quantity for radially contiguous spatial sections are entered at contiguous positions in the multidimensional output data array

6. A method as claimed in Claim 1, wherein the values of the quantity are derived from a series of images.

7. A method as claimed in Claim 6, wherein values of the quantity at respective instants are derived from respective images in said series of images.

8. A method as claimed in Claim 7, wherein respective positions in the multidimensional output data array are linked to respective spatial sections in respective images of the series.

9. A method as claimed in Claim 8, wherein the multidimensional output data array is displayed,
- a position in the displayed multidimensional output data array is indicated and
- on the basis of the indicated position in the displayed multidimensional output data array the corresponding image of the series is displayed and the corresponding spatial section in the image is marked

10. A method as claimed in Claim 1, wherein the quantity pertains to perfusion of the myocardium.

11. A data processing system adapted to analyze a quantity having temporal and spatial variations, the system being arranged to

- form a multidimensional output data array
- the multidimensional output data array comprising array positions arranged along at least a first data-axis and a second data axis
- enter values of the quantity in the multidimensional output data array, such that
- values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis and
- values of the quantity at substantially the same spatial position are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis

12. A computer-readable data carrier having stored therein a computer program comprising one or more instructions to

- form a multidimensional output data array
- the multidimensional output data array comprising array positions arranged along at least a first data-axis and a second data axis
- enter values of the quantity in the multidimensional output data array, such that
- values of the quantity at substantially the same instant are entered at respective positions in the multidimensional output data array at equal positions along the first data-axis and
- values of the quantity at substantially the same spatial position are entered at respective positions in the multidimensional output data array at equal positions along the second data-axis.

13. The method of claim 1, further comprising displaying the multidimensional output data array.

14 The method of claim 13, wherein the values of the quantity are derived from image data, and further comprising displaying the image data while displaying the image data while displaying the multidimensional output data array.

15 The method of claim 1, wherein the quantity is an average brightness value of image data.

16 The method of claim 15, wherein the image data comprises perfusion data of a human myocardium.

17. The method of claim 11, further comprising a display device adapted to display the multidimensional output data array.

18. The method of claim 17, wherein the values of the quantity are derived from image data, and wherein the display device is further adapted to display the image data while displaying the multidimensional output data array.

19. The system of claim 11, wherein the quantity is an average brightness value of image data.

20 The system of claim 19, wherein the image data comprises perfusion data of a human myocardium

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None known to undersigned attorney/agent.